GEOLOGIC MAP OF THE LEWISTON LAKES QUADRANGLE, FREMONT COUNTY, WYOMING

by
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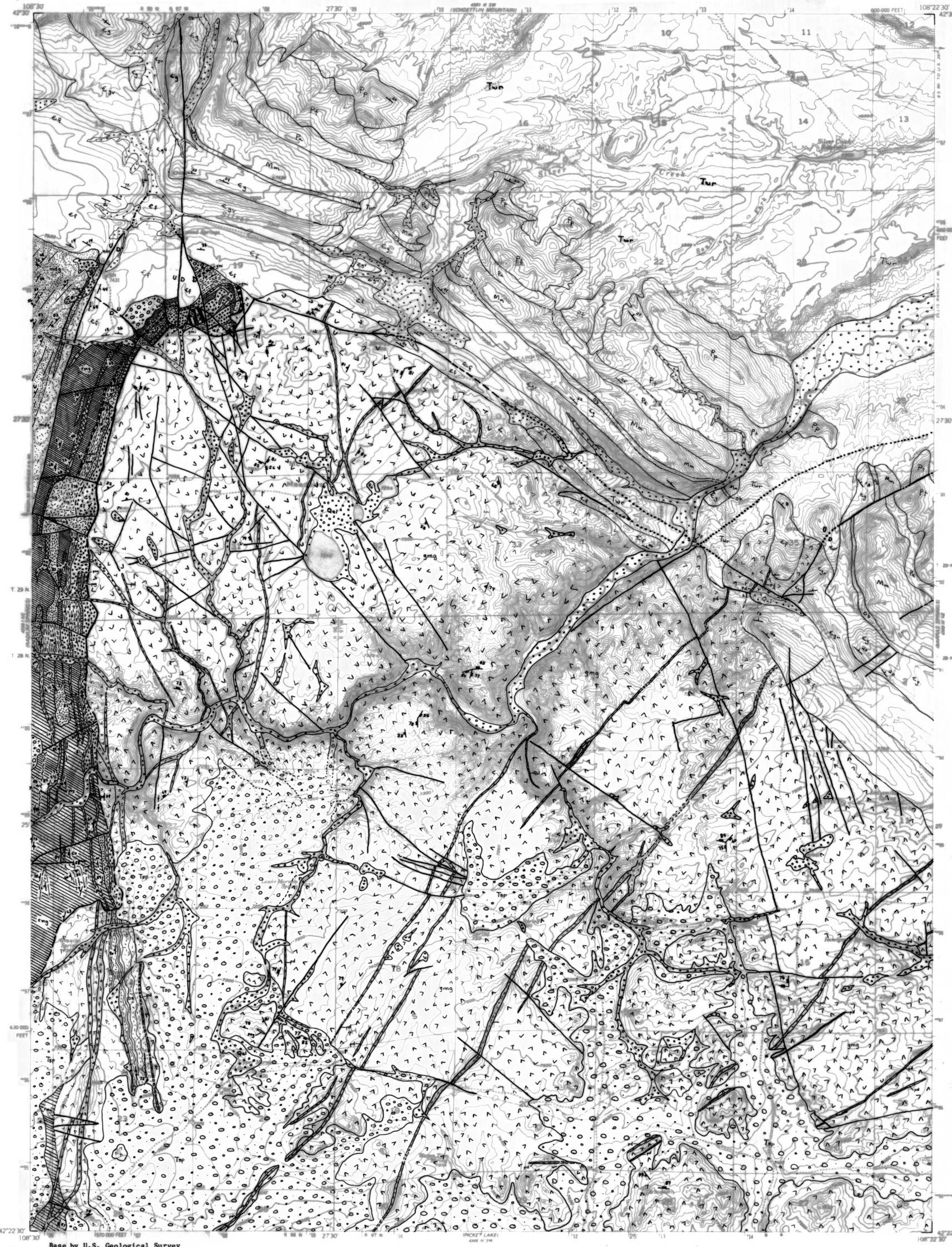

EXPLANATION

QUATERNARY

Qal — ALLUVIUM

Recent stream deposits.

UNCONFORMITY

TERTIARY

Tsp — SOUTH PASS FORMATION

Pliocene, Miocene, and possibly Eocene age conglomerates and pediments containing cobbles and boulders of metamorphic and granitic rocks. Fission-track age about 27 millions years.[1]

UNCONFORMITY

Twr — WHITE RIVER FORMATION

White to ash-gray blocky tuffaceous siltstone and arkosic conglomerate. (31 to 35 million years old).[1]

UNCONFORMITY

PERMIAN

Pp — PHOSPHORIA FORMATION

Cherty limestone with greenish-brown silty shale and bedded chert.

PENNSYLVANIAN

Pt — TENSLEEP SANDSTONE

Bedded to cross-bedded fine-grained sandstone.

Pa — AMSDEN FORMATION

Red beds with cherty sandy dolomite, calcareous siltstone, and limestone.

MISSISSIPPIAN

Mm — MADISON LIMESTONE

Massive limestone with irregular chert masses and nodules.

DISCONFORMITY

ORDOVICIAN

Ob — BIGHORN DOLOMITE

Massive dolomite with thin basal sandstone.

CAMBRIAN

Cg — GALLATIN FORMATION

Consists of a lower gray to brown, thick-bedded, silty limestone, a middle thin shale, and an upper medium- to thick-bedded, flat-pebble limestone conglomerate with interbedded thin shales.

Cgr — GROS VENTRE FORMATION

Dark green to red glauconitic shale and silty sandstone overlain by gray to tan shale with interbedded limestone, and an upper limestone.

Cf — FLATHEAD FORMATION

Red cross-bedded conglomeratic arkosic sandstone overlain by quartzitic sandstone with thin green shale interbeds.

INTRUSIVE IGNEOUS AND METAIGNEOUS ROCKS

pd — BASALT DIKES

Mafic dikes with subophitic textures. Similar dikes produce whole rock ages between 1,270 to 2,010 million years.[2]

gmg — GRANITE

gmg, *medium-grained, white, pink, and gray granite and granodiorite. Near contact with metamorphics, the granite commonly exhibits weak foliation. Locally, the granite hosts abundant amphibolite pods and lenses. Bull quartz and feldspar pegmatites (peg) are rare.*

mg — METAGABBRO SILLS AND DIKES

Weakly to strongly foliated metagabbro to metadiorite sills and dikes.

METASEDIMENTARY AND METAVOLCANIC SUPRACRUSTAL ROCKS

mdg, mdq — MINERS DELIGHT FORMATION

mdg, *Light brown to black feldspathic to micaceous greywacke.*

mdq, *Light green to brown fine-grained silicified quartzite and felsites(?).*

rmg — ROUNDTOP MOUNTAIN GREENSTONE

Metabasalt, amphibolite, mica schist and minor gruneritе schist and augen gneiss (ag) member. The metabasalt includes orthoamphibolite, vesicular and spotted metabasalts with tholeiitic chemistry.[3]

gmq, gmi — GOLDMAN MEADOWS FORMATION

gmq, *metasedimentary member, mica schist, andalusite mica schist, amphibolite, and quartzite.*

gmi, *iron formation, both magnetite-chert, and hematite iron formations.*

dsg — DIAMOND SPRINGS FORMATION

Plagioclase-hornblende amphiboles, serpentinites, and tremolite-actinolite, talc-tremolite-chlorite schists. The ultramafic schists and serpentinites have similar chemistry to komatiite and the plagioclase-hornblende amphibolites have tholeiitic affinity.[3]

bz — BORDER ZONE

Metasediments (quartzites, metapelites and amphibolites) intruded by concordant granitic layers.

PRECAMBRIAN

MAP SYMBOLS

- Shear zone with 35° dip.
- Fault, dotted where concealed, dashed where approximately located. U = upthrown side, D = downthrown side.
- Foliation trends.
- Prospect pit.
- Strike and dip of foliation.
- Strike and dip of bedding.
- Strike and dip of joints.
- Top of beds.

REFERENCES

[1]Love, J.D., and Christiansen, A.C., 1985, Geologic map of Wyoming: U.S. Geological Survey, scale 1:500,000.

[2]Condie, K.C., Leech, A.P., and Baadsgaard, H., 1969, Potassium-argon dates of Precambrian mafic dikes in Wyoming: Geological Society of America Bulletin, v. 80, p. 899-906.

[3]Hausel, W.D., 1987, Preliminary report on gold mineralization, petrology, and geochemistry of the South Pass granite-greenstone belt, Wind River Mountains, Wyoming: Wyoming Geological Association 38th Annual Field Conference Guidebook, p. 287-304.

This map has not been edited for conformity with the editorial standards of the Geological Survey of Wyoming.

Mapping of the Phanerozoic rocks in the northeastern corner of the quadrangle was modified from, Bell, W.G., 1955, The geology of the southeastern flank of the Wind River Mountains, Fremont County, Wyoming: University of Wyoming Ph.D. thesis, 204 p. The Precambrian geology and overlying Tertiary rocks and alluvium **were mapped in** 1985 by W. Dan Hausel. This field work was partially financed by U.S. Geological Survey COGEOMAP grant 14-08-0001-A0226. The views and conclusions of this map are those of the author and should not be interpreted as necessarily representing official policies, either expressed or implied, of the U.S. Government.

Base by U.S. Geological Survey

PREPARED IN COOPERATION WITH THE U.S. GEOLOGICAL SURVEY

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 MILE

1 KILOMETER

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

ROAD CLASSIFICATION

Heavy-duty — Light-duty

Medium-duty — Unimproved dirt

U.S. Route — State Route

WYOMING